The mouth as a source of coagulase negative staphylococcal septicaemia in low birth weight neonates

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Coagulase negative staphylococcal (CNS) septicaemias are a relatively common cause of serious febrile illness among neonates. Often the source of the infecting organism is unknown. Recent work at Glasgow Dental School has shown the importance of staphylococci as members of the oral flora. This raises the possibility that the mouth may be a reservoir for systemic infections with staphylococci *(Kennedy et al. J. Med. Microbiol.* 2000; 49: 367–70). This study investigated the colonisation of the oral cavity by staphylococci over the first four weeks of life, among a cohort of premature neonates, and also determined the possible source of CNS among a cohort of low birth weight neonates presenting with a CNS septicaemia. Over a three month period, all premature neonates born in the Royal Maternity Neonatal Unit were enrolled. Swabs were collected from the axilla, hand, foot, mouth and/or throat at birth, and on days 4, 7, 14, 21 and 28 after birth. These swabs were cultured on blood agar and mannitol salt agar for 48 hours at 37°C. All CNS isolates from these sites and from positive blood cultures were speciated using *API32 Staph.* Where appropriate, typing by pulsed field gel electrophoresis was also employed to demonstrate strain relatedness between blood culture isolates and those from other sites in the same individual. Several clones were found to be endemic within the unit, infecting up to 31 babies over a period of at least two years.

***Candida tropicalis* colonisation and fungemia in a neonatal intensive care unit**

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Objective: *Candida parapsilosis* has recently emerged as the predominant non-*albicans* spp causing fungemia in neonates as well as clusters and common-course outbreaks. In contrast, *Candida tropicalis* fungemia has not been adequately described in neonates and the significance of gastrointestinal colonization of neonates by this pathogen as well as of various risk factors remains speculative. We performed a prospective study of fungal colonization and infection in the Aristotle University neonatal intensive care unit.

Methods: Surveillance cultures of the mouth and perineum were performed from 12/98 to 12/99 in 593 infants. Potential environmental reservoirs and possible risk factors for the acquisition of *C. tropicalis* were searched.
Results: 72 neonates were colonized by yeasts, among which 28 were *C. albicans*, 17 *C. tropicalis* and 5 *C. parapsilosis*. Ten cases of fungemia occurred: 6 *C. parapsilosis*, 2 *C. tropicalis*, 1 *Candida glabrata* and 1 *Trichosporon asahii*. During the first 4 months, *C. tropicalis* caused 2 fungemias and 17 cases of colonization. All infants with *C. tropicalis* strains had overlapping NICU stays. 2 out of 17 neonates were colonized by *C. tropicalis* at an early stage probably through vertical transmission. The remaining neonates were colonized at a late stage (>7 days) during their NICU stay suggesting nosocomial acquisition of *C. tropicalis*. Colonization by *C. tropicalis* preceded in both infected neonates. However the fungemia/colonization ratio (2/17) was lower than that *for C. parapsilosis* (3/5, p=0.05). There was no prophylactic use of antifungal azoles in the NICU and extensive environmental cultures revealed no common source for *C. tropicalis*. Only prior administration of total parenteral nutrition was found to be significant risk factor for *C. tropicalis* colonization (comparison with *C. albicans*, p=0.024). All 4 courses of *C. tropicalis* fungemia were successfully treated with amphotericin B. No new cases of colonization or fungemia due to *C. tropicalis* have occurred after 2000.
Conclusions: The high prevalence of *C. tropicalis* colonization (>25%) and the emergence of that pathogen as cause of neonatal fungemia during our study suggests an outbreak in the unit. Colonizing *C. tropicalis* strains are able to cause invasive disease in neonates; however, their invasiveness is moderate and the outcome of the infection fair.

INFECTIONS IN CANCER PATIENTS

Microculture tetrazolium assay (MTT) application for measuring cell-mediated immunity (CMI) and evaluating certain mitogenic substances as future drugs of immune therapy for head and neck cancer patients (HNCA)

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Microculture tetrazolium assay (MTT) was applied on the freshly isolated peripheral blood lymphocytes (PBL) of 48 head and neck cancer (HNCA) patients who were selected randomly and without any bias from two main centers; University hospital of Saddam College of Medicine and radiotherapy center in Baghdad, Iraq. In addition to that 22 apparently healthy subjects were used as a healthy control (HC) group for comparison with HNCA patients.